IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket No. 15-IS-5715 (13035US01)

In the Application of:	
Silva-Craig et al.	Examiner: Baoquoc N. To
Application No.: 09/681,471	Group Art Unit: 2172
Filed: April 13, 2001	Attorney Docket No.: 15-IS-5715
For: Application Service Provider Based Redundant Archive Services for Medical Archives and/or Imaging Systems	Confirmation No.: 7327

REPLY BRIEF ON APPEAL

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Sir or Madam:

This Reply Brief responds to the Examiner's Answer mailed on April 10, 2007. The Applicant respectfully requests that the Board of Patent Appeals and Interferences reverse the final rejection of claims 1-8, 11-20, 23-36 and 53-54 of the present application.

REMARKS

In response to Applicant's Appeal Brief, the Examiner states the following:

Status monitor

The argument such as "any component of the system in Rothschild **separate** from the data source and central data management system both monitors operations occurring at the data source and triggers and [sic] an archive request to cause the data to be transmitted to the central data management system, as recited in claim 1" is not in the claim.[1]

Some data regularly comes from various kinds of monitoring machines and directly enters to the process unit and memory of the file server 11 ...) (col. 14, lines 63-67 and col. 15, lines 1-2). This suggests Kumagai include [sic] a monitoring unit which obtained the data from the source.[2]

Applicant respectfully disagrees with the Examiner's characterizations. In supplement to the Applicant's Appeal Brief submitted on December 19, 2006, which is herein incorporated by reference in its entirety, the Applicant addresses the Examiner's response with the following additional remarks. Applicant's arguments focus on the following:

(1) None of the cited references teach or reasonably suggest, alone or in combination, a status monitor as recited in the pending claims of the present application.

(2) The claims of the present invention recite a separate status monitor component to monitor operations occurring at the data source to trigger requests to cause data to be transmitted to the central data management system.

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[1] *See* Examiner Answer at page 20.
[2] *See* Examiner Answer at page 21.

    (3)   The monitoring machines of Kumagai are not status monitors as recited in the pending claims.

NONE OF THE CITED REFERENCES TEACH OR REASONABLY SUGGEST, ALONE OR IN COMBINATION, A STATUS MONITOR AS RECITED IN THE PENDING CLAIMS OF THE PRESENT APPLICATION.

The present invention provides a centralized remote data storage and retrieval system comprising a data source (reference number 110 in Figure 1), a remote data store (reference number 120 in Figure 1), a front-end connection (reference number 130 in Figure 1), a back-end connection (reference number 135 in Figure 1), a status monitor (reference number 140 in Figure 1) and an access authenticator (reference number 145 in Figure 1).[3] The data source (reference number 110 in Figure 1) provides medical data, the status monitor (reference number 140 in Figure 1) controls the transfer of the medical data from the data source (reference number 110 in Figure 1) to the remote data store (reference number 120 in Figure 1), and the remote data store (reference number 120 in Figure 1) receives and stores the medical data.[4]

The data source (reference number 110 in Figure 1) is a source or point of origin of medical data and may include a picture archiving and communications system (PACS), a medical diagnostic imaging system, a database system, a computer system, a server, a hard disk drive, a terminal, or other medical data storage system, for example.[5]

The remote data store (reference number 120 in Figure 1) is a device that archives or stores medical data, such as an application service provider, a server, a redundant disk array, a Redundant Array of Independent Disks ("RAID") drive, a hard disk drive, an archive, a database system, a computer system, or other central data storage system, for example.[6]

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[3] '471 Specification at page 6, lines 1-6.
[4] '471 Specification at page 6, lines 1-6.
[5] '471 Specification at page 6, lines 15-23.
[6] '471 Specification at page 7, lines 1-16.

The status monitor monitors the data source, the remote data store, the front-end connection, and/or the back-end connection.[7]   The status monitor monitors and/or controls activities such as:

- requests by the data source and/or remote data store,

- data at the data source and/or remote data store,

- data traveling over the front-end connection and/or the back-end connection, and/or

- commands and/or instructions traveling over the front-end connection and/or the back-end connection, for example.

The claims of the present invention recite a separate status monitor component to monitor operations occurring at the data source to trigger requests to cause data to be transmitted to the central data management system.

As shown, for example, in Figure 1 and its associated description, the status monitor 140 is a separate component, possibly instantiated in conjunction with the access authenticator 145, positioned between the data source 110, the remote data store 120, and possibly additional data source(s) 115, etc.   Clearly, the status monitor is a distinct component communicating and interfacing with a plurality of data sources 110, 115 rather than simply a part of a single data source as asserted by the Examiner.

Independent claim 1 recites (with emphasis added):

1.   A central medical data archiving system, said system comprising:

a **medical data source** providing medical data, wherein said medical data comprises at least one of a medical image, a medical patient report, and a medical application;

a **status monitor** for controlling a transfer of said medical data **from said data source to a centralized remote data store**, wherein said **status monitor monitors operations occurring at said data source** and triggers an archive request after said medical data is obtained by said data source, said data source transmitting said medical data to said centralized remote data store when said archive request is triggered; and

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[7] '471 Specification at page 8, lines 4-17.

a **centralized remote medical data store** receiving said medical data and storing said medical data, wherein said centralized remote medical data store comprises an application service provider.

Independent claims 15 and 25 similarly treat the status monitor as a separate, distinct component. Furthermore, it is clear from the prosecution history that the status monitor is to be treated as a separate, distinct component. The status monitor controls transfer of data between a data source and the central remote data store and is a separate, distinct component of the system, as discussed with the Examiner during prosecution.[8]

None of the cited references teach or reasonably suggest, alone or in combination, a status monitor as recited in the pending claims of the present application.

For example, Rothschild does not teach or suggest a status monitor that 1) monitors operations occurring at the data source and 2) triggers an archive request after the medical data is obtained by the data source, where the data source transmits the medical data to the centralized remote data store when the archive request is triggered by the status monitor, as recited in claim 1.[9] Instead, Rothschild merely describes a local image workstation that "pushes" an electronic record to the central data management system once data is obtained by the local image workstation. (column 18, lines 53-56.)[10] The local image workstation is not triggered by any other component of the system to transmit the image data. Instead, the local image workstation simply transmits the data once it is obtained.

The local image workstation of Rothschild does not wait for any trigger, request, command, or directive from a status monitor. In fact, Rothschild clearly distinguishes the "pushing" of data by the local image workstation from triggering a transmission of medical data by contrasting the "pushing" of data with the "pulling" of data. (column 18, lines 53-56; column 22, lines 25-43.) For example, Rothschild defines the "pushing" of data as the transmission of data as soon as the data is obtained, without waiting for any request for the data or directive from a status monitor to transmit the data. (column 22, lines 25-28.) By way of contrast, Rothschild defines the "pulling" of data as the transmission of data after a request is made for the data by a user. (*see* column 22, lines

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[8] *See, e.g.*, Response dated December 29, 2003.
[9] Amendment and Response dated November 22, 2004, at pages 12-13.

28-30.) Rothschild clearly states that the central data management system "pushes" the data and does not "pull" the data. Therefore, a data source in Rothschild does not wait for any trigger to transmit medical data for storage. Thus, Rothschild does not teach or suggest at least the status monitor recited in the claims of the present application.

Similarly, Parvulescu merely describes an archiving device 100 that receives an analog signal from an image capture device 204 and stores the image in digital form on an internal hard drive. (column 4, lines 30-36.)[11] There is no teaching or suggestion of any production of a trigger to cause medical data to be transferred from a source to a remote data store. There is no teaching or suggestion of any device or routine that either controls data transfer or triggers the archiving of medical data when medical data is obtained. Therefore, Parvulescu does not teach or suggest at least the status monitor recited in the pending claims.

Furthermore, the Examiner incorrectly contends that Sameshima discloses the recited "status monitor" because of a disclosed status control table 234.[12] However, the table 234 relied upon by the Examiner is a software structure that only monitors **internal** operations occurring at the processing device that includes the table 234.[13]

Drexler relates to systems used to compensate for the loss of data spots on an optical memory card.[14] However, Drexler also contains no teaching or suggestion of automatic error detection or other status monitoring as recited in claims of the present application.

The monitoring machines of Kumagai are not status monitors as recited in the pending claims.

Finally, the Examiner incorrectly asserts that the monitoring machines of Kumagai constitute a status monitor as recited in the claims of the present application. Kumagai relates to a computer software system for medical use, and more particularly, to a system which collects, organizes and integrates various kinds of medical data collected on a regular or irregular basis from different sources such as doctors, nurses, laboratories,

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[10] *See also* Examiner's Answer at page 8.
[11] Id. at page 17.
[12] Amendment and Response dated August 31, 2006, at pages 14-16.
[13] *Id.*
[14] *Id.* at pages 28-29.

drug companies and hospitals.[15] As quoted by the Examiner, in Kumagai, "[s]ome data regularly comes from various kinds of monitoring machines and directly enters the processing unit memory of file server 11 . . ." (col. 14, lines 61-67 to col. 15, lines 1-45). However, Kumagai is concerned with a medical record flowsheet, and the "monitoring machines" emphasized by the Examiner are, in fact, physiological data collecting or "monitoring" devices collecting readings from patients, such as blood sugar level, urine volume, blood pressure, etc.[16] The reading **directly** enters the processing unit and memory of file server 11."[17] By the explicit words of the Kumagai reference itself, aside from the use of "monitor" and "monitoring" in a different sense of the word, no status monitor, as recited in the pending claims, is taught or suggested in Kumagai.

"The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure."[18] The Examiner, however, offers no support from the references for his conclusions regarding motivation to combine and combination to achieve the status monitor and other steps/components recited in the pending claims. In short, the Examiner's rationale amounts to no more than a conclusory statement of convenient assumptions about one of ordinary skill in the art, which is a factual question that cannot be resolved on "subjective belief and unknown authority."[19]

"The factual inquiry whether to combine references must be thorough and searching."[20] "It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with."[21] The Examiner does not base his conclusions on any evidence of record (i.e., the cited references). Instead, the Examiner summarily concludes, without any prior art evidence, that one would be motivated to combine various references and would therefore arrive at all of the components or steps recited in the pending claims. Federal Circuit "case law makes clear

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[15] Kumagai at col. 1, lines 11-16.
[16] Kumagai, at col. 7, line 28 – col. 8, line 15.
[17] Kumagai, at col. 14, line 61 to col. 15, line 10 (emphasis added).
[18] See Manual of Patent Examining Procedure (MPEP) at § 2142, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added).
[19] See *In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002).
[20] See, e.g., *McGinley v. Franklin Sports, Inc.* 262 F.3d 1339, 1351-52 (Fed. Cir. 2001).
[21] See *In re Lee*, 277 F.3d at 1343 (internal citations omitted).

that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."[22] The "examiner can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teaching reference.'"[23] Instead, the Examiner offers only subjective opinion and conclusion as support.

In *In re Lee*, the Federal Circuit noted that "Board rejected the need for 'any specific hint or suggestion in a particular reference' to support the combination of ... references," which was an "[o]mission of a relevant factor required by precedent" that was both "legal error and arbitrary agency action."[24] The Examiner has not specified any hint or suggestion in the cited references to support their combination.

> [The Federal Circuit] explained ... that "deficiencies of the
> cited references cannot be remedied by the Board's general
> conclusions about what is 'basic knowledge' or 'common
> sense.'" The Board's findings must extend to all material
> facts and must be documented in the record, lest the "haze
> of so-called expertise" acquire insulation from
> accountability. "Common knowledge and common sense,"
> even if assumed to derive from the agency's expertise, **do
> not substitute for authority when the law requires
> authority.**"[25]

The Examiner's subjective opinion of "common knowledge" or "common sense" is not enough to establish a *prima facie* case of obviousness. Thus, at least for these reasons, Applicant respectfully submits that the pending claims should be in condition for allowance.

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[22] *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).
[23] *See in re Lee*, 277 F. 3d at 1343, citing *In re Fitch*, 972 F. 2d 1260, 1265 (Fed. Cir. 1992) (emphasis added).
[24] *See id.* at 1344, citing *Morot Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.*, 463 U.S. 29 at 43 (1983).
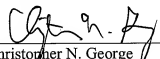[25] *See id.* at 1344-1345 (internal citations omitted).

CONCLUSION

For the foregoing reasons, claims 1-8, 11-20, 23-36 and 53-54 are distinguishable over the prior art of record. Thus, the Applicant respectfully requests a reversal of the Examiner's rejection and issuance of a patent on the present application. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of GEMS-IT, Account No. 502401.

Respectfully submitted,

Dated:
June 11, 2007

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CLAIMS APPENDIX

The following claims are involved in this appeal:

1. A central medical data archiving system, said system comprising:

a medical data source providing medical data, wherein said medical data comprises at least one of a medical image, a medical patient report, and a medical application;

a status monitor for controlling a transfer of said medical data from said data source to a centralized remote data store, wherein said status monitor monitors operations occurring at said data source and triggers an archive request after said medical data is obtained by said data source, said data source transmitting said medical data to said centralized remote data store when said archive request is triggered; and

a centralized remote medical data store receiving said medical data and storing said medical data, wherein said centralized remote medical data store comprises an application service provider.

2. The system of claim 1, wherein said status monitor verifies said transfer of said medical data from said data source to said remote data store.

3. The system of claim 1, further comprising an access authenticator for authenticating access to said remote data store by said data source.

4. The system of claim 3, wherein said access authenticator authenticates access to said data source.

5.   The system of claim 1, wherein said data source further stores medical data.

6.   The system of claim 5, wherein said remote data store further restores said medical data to said data source.

7.   The system of claim 1, wherein said remote data store stores a copy of said medical data.

8.   The system of claim 1, further comprising a second data source for storing medical data, wherein said remote data store transfers said medical data to said second data source.

11.   The system of claim 1, wherein said status monitor controls the transfer of data from said data source to said remote data store at a definable interval.

12.   The system of claim 11, wherein said definable interval comprises a timed interval.

13.   The system of claim 11, wherein said definable interval comprises an event-based interval.

14.   The system of claim 11, wherein said definable interval comprises a manual interval.

15.   A system for remotely accessing a centralized data store, said system comprising:

a centralized remote data store storing medical data indexed according to data source, wherein said medical data comprises at least one of a medical image, a medical report, and a medical application, wherein said centralized remote data store comprises an application service provider; and

a status monitor for controlling a transfer of said medical data from said centralized remote data store to a data source, wherein said status monitor automatically detects an error in said medical data at said data source by detecting at least one of data loss, data corruption, and failure of said system via a front-end connection between said data source and said status monitor, said status monitor instructing said centralized remote data store to transmit data to said data source in order to restore said medical data,

wherein said data source receives said medical data and stores said medical data.

16.   The system of claim 15, further comprising a second data source storing medical data.

17.   The system of claim 16, wherein said status monitor controls the transfer of said copy of said medical data between said remote data store and said second data source.

18.   The system of claim 16, wherein said status monitor verifies the transfer of said copy of said medical data between said remote data store and said second data source.

19.   The system of claim 15, further comprising an access authenticator for authenticating access to said remote data store.

20.   The system of claim 15, wherein said status monitor verifies said transfer of said medical data between said data source and said remote data store.

23.   The system of claim 15, wherein said remote data store restores said medical data at said data source.

24.   The system of claim 15, wherein said remote data store comprises at least one directory corresponding to said data source.

25.   A method for remotely archiving medical data, said method comprising:

detecting an operation involving medical data executed at a medical data source, said operation including obtaining said medical data at said medical data source;

transferring said medical data from said medical data source to a centralized remote data store based on a trigger, wherein said trigger is produced by a status monitor after said operation occurs, wherein said medical data comprises at least one of a medical image, a medical report, and a medical application;

storing said medical data at said centralized remote data store; and

indexing said medical data according to said data source.

26.   The method of claim 25, further comprising the step of obtaining said medical data.

27.   The method of claim 25, further comprising the step of storing said medical data at said data source.

28.   The method of claim 25, wherein said storing step further comprises storing said medical data at said remote data store in a directory corresponding to said data source.

29.   The method of claim 25, wherein said transferring step further comprises verifying said transfer of medical data from said remote data store to said data source.

30.   The method of claim 25, further comprising the step of authenticating access to said remote data store.

31.   The method of claim 25, wherein said transferring step occurs after a definable interval.

32.   The method of claim 31, wherein said definable interval comprises a timed interval.

33.   The method of claim 31, wherein said definable interval comprises an event-based interval.

34.   The method of claim 31, wherein said definable interval comprises a manual interval.

35.   The method of claim 25, further comprising the step of restoring said medical data to said data source from said remote data store.

36.   The method of claim 25, further comprising the step of copying said medical data from said remote data store to a second data source.

53.   The system of claim 1, further comprising a dedicated network connection for transferring said medical data between said medical data source and said centralized remote medical data store.

54.   The system of claim 15, further comprising a private network connection for transferring said medical data between said data source and said centralized remote data store.